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EXCAVATION OF A PREHISTORIC SITE AT TARRIN, DEPARTMENT OF THE HAUTES ALPES, FRANCE

By CHARLES PEABODY

THREE years ago, through the kindness of Mr Hippolyte Müller, librarian of the École de Médecine et de Pharmacie of Grenoble, the writer was informed of the existence of prehistoric sites in the Department of the Hautes Alpes, France. On inquiry of the informant of Mr Müller, Mr Paul Plat, the feasibility of excavation for a foreigner was established, and after a brief visit to the region in September, 1911, work was determined upon, and commenced October 22, 1912.

The exact site is at Tarrin, six kilometers west of the station "Eyguians-Orpierre" on the "Route des Alpes" of the Paris, Lyons, and Mediterranean Railway.

The village of Orpierre, three kilometers to the westward of the site of excavation, was the base of operations. This is a commune of the Department of the "Hautes Alpes" (capital Gap), and lies about 14 kilometers north of the departmental boundary line. This brings it at present about the same distance within the borders of Dauphiné, northward of the limits of Provence. Nevertheless the traditions and folk-lore of the people are very largely Provençal, the language of everyday life is Provençal, and there seems to be a lack of the eagerness to do away with a native speech, other than French, that strikes one in the Dordogne region. Nearly everyone can speak French, though with some accent; sermons and speeches are made in that language, though almanacs and newspapers in Provençal have some circulation. There is a noticeable absence of the enthusiastic manner and manners characteristic among us no less than among the French of the more southerly districts; also during my stay there was hardly any folksong in a land otherwise peculiarly rich in folk-lore.

Mr Plat has put together some of the sayings and proverbs of the country and it is hoped to publish them, partly in French and partly in Provençal, with annotations by the present writer, in the not very distant future.

There is no reason to suppose that in prehistoric times the region was not occupied by the long-headed, dark Mediterraneans, though in classical days the Celtic Vocontii were the inhabitants. These remained undisturbed by the Romans, and there seems to have been a continuous occupancy from then until now.

The Hautes Alpes is one of the most sparsely populated of the departments, and neither exports nor imports very much. The inhabitants, agriculturists, live to a great extent on the animals and produce they raise themselves, and it must be said that these are very good.

The native red wine is excellent, and the vintage, as it was my privilege to see it, an interesting occasion. Game is not plentiful, but there is some. Truffles are abundant and very highly appreciated; they are found by the help of dogs. The place of large shops is taken by the innumerable *foires*, especially abundant in the autumn. To these the farmers take their stock and wares, and numerous peddlers and agents may be seen going about from fair to fair—real "going-about bodies," as they are called in New England.

Geologically the region is largely of limestone formation, which has been in great part glaciated. The various lateral glaciers make an interesting and complicated study, which has been a large part of the life-work of Mr David Martin, curator at the new Departmental Museum at Gap.

Topographically, Tarrin rests on a bank to the south, about 10 meters above the bed of the Céans stream, a distance of about 150 meters. The Céans flows into the Buech near the Eyguians-Orpierre Railway station, and the Buech in turn into the Durance, famous in Hannibal's time, while the Durance flows through a broad valley southwest into the Rhône.

Tarrin lies at the foot of the Montagne de Chabre (1,311 meters) to the south, a ridge 14 kilometers long without a break, and Le Suillet, a much more picturesque and irregular range to the north (1,326 meters). The watershed to the west between the

Buech and the Rhône is formed by a ridge of more than 1,300 meters altitude, the nearest pass to the Rhône valley being the Col de Perty, about 15 kilometers from Orpierre. The altitude of Orpierre is 680 meters. The climate is temperate enough to attract a few summer visitors from Marseille, though it is little known to tourists otherwise. The good roads of the department deserve more motor-travel.

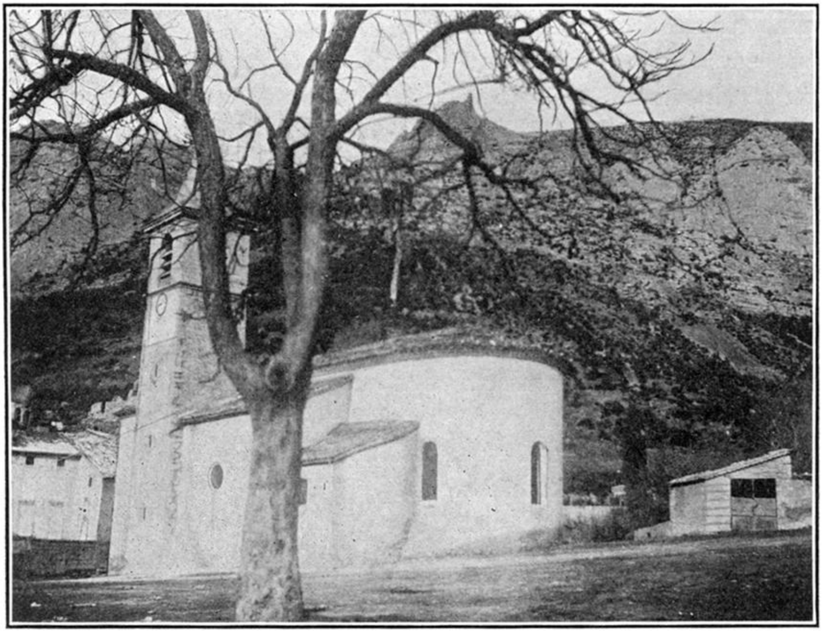

FIG. 50. — Church at Orpierre.

The people are hospitable, and both Roman Catholics and Protestants made my stay one of a friend and comrade rather than that of a stranger. Particular acknowledgment of a formal character should here be made to my host of the inn, Mr Debeaux, and his son, to Mr and Mme Plat and their children, to the parish priest, the *pasteur* and the *réceveur*.

No obstacles were put in the way of excavation by a foreigner. In the light of recent circumstances in a department not very distant, it is somewhat remarkable that the French have left the freedom of excavation to him who seriously wills—all honor to them. Work was carried on by a force of four men: Mr Plat; the owner of the particular farm, Mr Maigre; the latter's son, and a young man named Achard. The hours were short, as in November the days are short; work was discontinued on November 20. Of the thirty-one days, fifteen were freezing days (that is with a minimum temperature of zero Centigrade or below); the absolute minimum was — 4 on each of four days; rain fell on six days and snow on four; the latter reached a depth of three centimeters on November 15. This registered a cold fall for the region in spite of its latitude, 44.20. On October 28 we observed a solar fog halo, at half-past seven, opposite the sun; some colors were visible; this was for me a unique observation.

Tarrin slopes to the north, hence the ground was slow in softening in the morning, and the snow long in melting. The spectacle was presented of the entire opposite side of the valley to the summit of Le Suillet presenting an autumnal aspect,—clear of snow and retaining the brown leaves of the scrub-oaks,—while the immediate foreground looking toward the sun and the entire Chabre range were wintry and almost unbroken white.

The soil is of a clay resembling the "black waxy" of Texas and the "gumbo" and "buck-shot" of Mississippi, which makes excavation tedious and surface-hunting laborious. Add to this the probability of everything to be found being of minute dimensions, it will be seen why digging had to be so careful and progress so slow. The men used picks about half the size of an ordinary pick-ax; this could be wielded best with one hand. The two older men understood perfectly what we were in search of, and their quick eyes were far in advance of the slower sight of myself.

The ground selected for excavation is a natural ridge sloping down toward the Céans stream and is contained between two brooks, dry most of the time. The brook to the east is one meter 70 centimeters below the center stake of the excavation, and that to the west three meters 70 centimeters below the same point.

On the little plateau stakes were set out at intervals of two meters, and numbered during the course of the work, from north to south: – 2, – 1, 0, 1, 2, 3, 4, 5; and from east to west, O, I, II, III, IV. Stakes 2 and II occupied the same spot (see the plan).

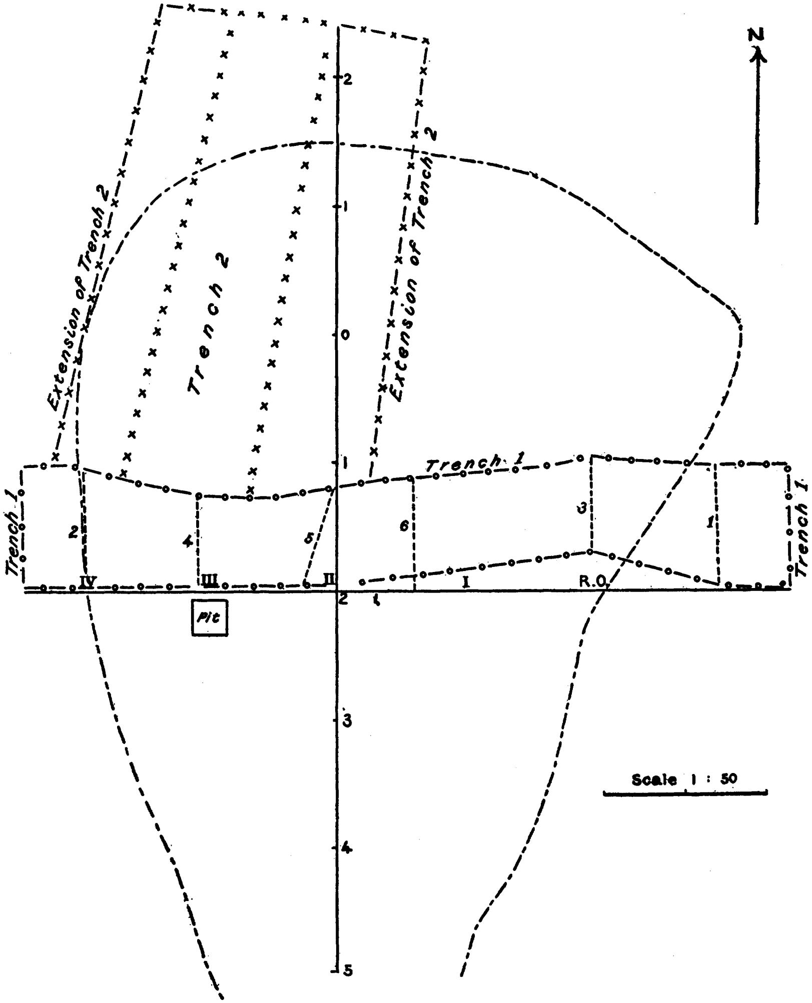

FIG. 51.—Plan of excavation at Tarrin.

But two trenches were cut in this ground: trench 1 from three meters east of Roman O to one meter west of IV, and trench 2 from a little south of the line of stake 2 north to one meter north of – 2. Trench I was from one meter and a half to two meters wide, and from one meter 25 centimeters to two meters deep.

Trench 2 was about two meters or less wide and from one meter 75 centimeters to two meters 30 centimeters deep.

Trench 2 was later extended by widening about one meter to the west and two meters to the east.

The greatest depths reached were west and south of stake 2—II, where, at a distance of three meters and 35 centimeters, the charcoal, which had been visible to within 10 centimeters, seemed definitely to disappear, and in a pit in trench 2, near the line of stake I. Here the accompanying cross-section was presented.

1	Yellow clay	90 centimeters.
2	Blue clay	1 meter.
3	Soft yellow clay	50 centimeters.
4	Hard blue clay	40 centimeters.
5	Soft yellow clay	50 centimeters.
6	Light-colored clay	50 centimeters.
7	Gravel	

No evidences of human occupancy were seen below the hard blue clay (4); the gravel is like that of the brook-bed at the site to the west, and not improbably the same as that of the larger Céans stream. This gravel is four meters 60 centimeters below the top of the higher bank of trench 2, and represents the greatest depth reached by the men with their primitive picks. Even the traces of roots, frequent enough in the upper strata, become infrequent after three meters' depth is reached.

The industry met with was much the same throughout. From near the surface to the depth at which human evidences ceased it seemed fairly homogeneous. Pottery, flint, pebbles whole and broken, animal bones, clay, hard earth, fragments of limestone and an arkose-like sandstone, and an abundance of charcoal were met at nearly all depths and places. Many of the stones and their fragments, a small proportion of the chipped flints, and numerous masses of burnt clay testify to the action of fire. In one case the limestone has been so altered and cracked that the degree of heat must have been great.

Even localization of the industry was not easy. There was comparatively little in the eastern end of trench 1, and there were comparatively many animal bones at the extreme northern end of trench 2. There was absolutely no indication of progression of industry through stratification, nor even of length or succession of occupancies.

For a space of about one-meter radius from stake III, on the line of stake 2, reaching to a depth of one meter and a half, there were found more remains indicating man than anywhere else in a similar area. There were also two rude horizontal strata of pebbles, or small bowlders, which gave us some justification for the title "Fond de Cabane." This we denominated No. 1, while a somewhat similar appearance at the extreme northern end of trench 2 we called "Fond de Cabane 2."

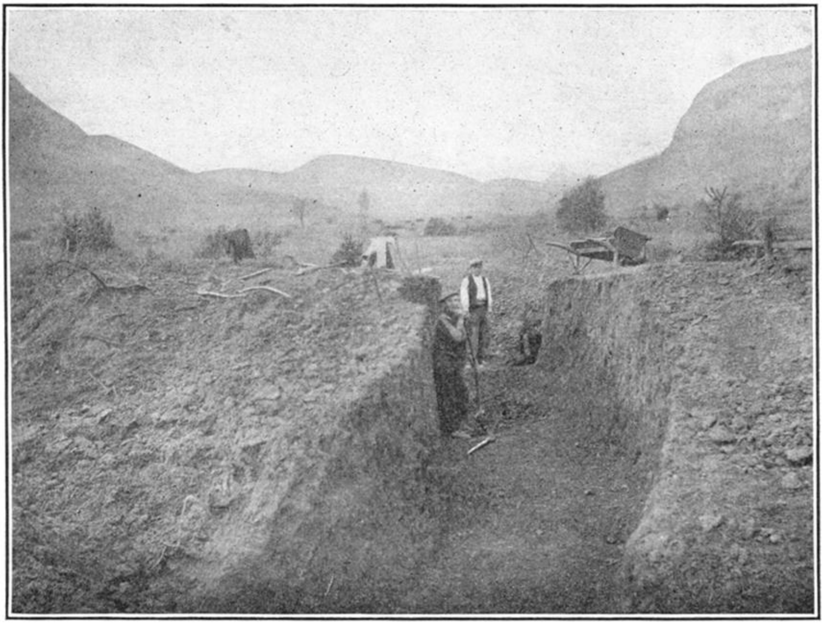

FIG. 52.—Trench 1, looking west.

Nearly under stake III, on the line of stake 2, and again at one meter west of stake III and one meter north of stake 1 were pockets or deposits of sand differentiating themselves sharply from the compact clay of the remainder of the digging. These may be of water formation; charcoal and other remains of man's work may readily have trickled in from the side.

Of course the whole bank is of comparatively recent geological formation. Much of it must be a talus or wash from the mountain to the south whose upper few hundred feet are a precipice of entirely naked rock. It is not unlikely that even the two brooks at either side of the excavation were not in existence at the time most of the prehistoric inhabitants were there. Notwithstanding the many chances of disturbance and the complete absence of archeological or geological stratigraphy, it is not likely that any culture later than the neolithic had anything to do with the interior deposits.

On the surface were large quantities of glass, probably Roman, and some bronze. As we did not find these beneath the surface, it is not unreasonable to suppose that what we did find was earlier and fairly well in place.

The results of the digging in pottery, flint, and bone may be briefly commented on and then summarized.

Pottery.—No complete vase was found; not even two or more pieces that could with certainty be attributed to the same vase.

At an excavation carried on previously by Dr de Vésignié and Mr Plat, a short distance to the southeast, a number of fragments belonging to a single vase were found; it is to the writer a case of maximum fracturing of pottery. Not only were our fragments unrelated to each other, but they are small; the maximum length is 10 centimeters and the maximum thickness 14 millimeters. With the exception of a single fragment, which carries a rude finger-nail jabbing, the pottery is undecorated as to line, form, or paint. Of course paint may have been used and washed away; but at least 99 per cent. never had any.

A few of the vases had a ridge, possibly of service for suspension, extending along the outside at about the same position as the placing of the handles. When present at all, the handles are almost exclusively of the conical nipple-shape; a number bear vertical perforation. (This will interest Dr Guebhard.[1]) One of the vertically perforated handles has a double perforation. There are two instances of horizontal perforation.

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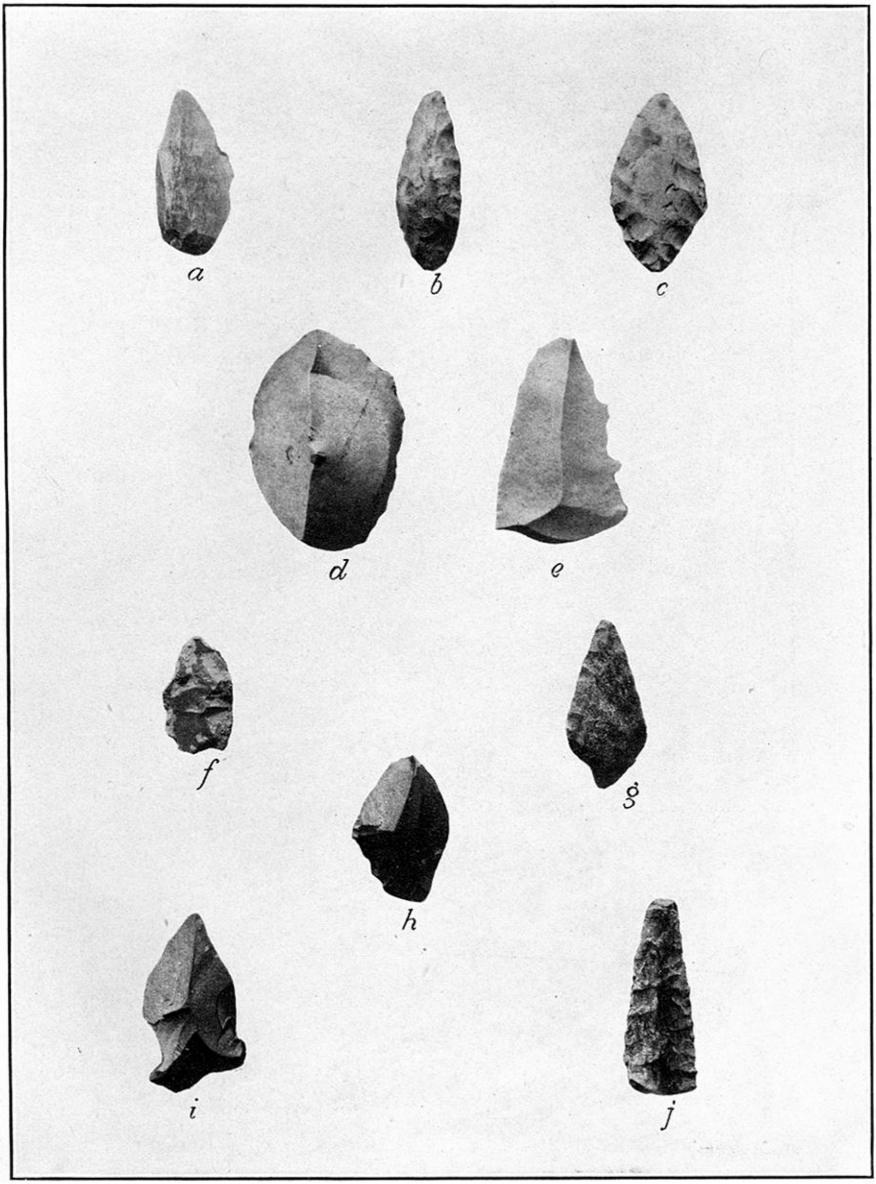
[1] Cf. *Mém. Soc. Preh. Française*, II, 1, 1912, Sur L'Anse Funiculaire.



VARIOUS TYPES OF PROJECTILE POINTS FROM TARRIN

a, *b*, *c*, *d*, *e*, *g*, from the surface ; *f*, *h*, *i*, *j*, from beneath the surface. *d* is 32 mm. in length.

The form of the vases, so far as can be surely made out, was generally bowl-shaped. There seem to be a few square corners, as of some plate or angularly formed object.

The pottery from beneath the surface was in a poor state of preservation. That from the surface is much harder; in spite of this the anomaly presents itself of the overwhelming proportion of the fragments found being from beneath the surface. Indeed not more than 10 per cent. is surface material, while in the case of the flints the proportion is very much the other way.

Owing to long burial in the damp ground many of the fragments are covered by an incrustation which completely hides the clay and at times attains a thickness of three millimeters.

The tempering is very abundant and obvious; it seems to be composed practically entirely of minute crystals of calcite. As the calcite is more resistant than the clay, in many instances the fragments present a rough, grater-like surface.[1] Calcite is found in some abundance on the surface; whether naturally or artificially it would be difficult to say.

Two types of pottery may be distinguished: the thicker, rougher variety, and a thinner, smoother kind; these, however, tend to blend into each other.

Flint.—Of the fragments of flint in the collection from Tarrin and its immediate vicinity, from on and under the surface, about 25 per cent. only comes from beneath.

The whole industry is distinguished by what may be termed "the way of least resistance." A proportion so small as almost to be negligible is composed of finely chipped, complete points, scrapers, knives, and perforators, such as one would expect to find on a neolithic site. The number of rough chips and masses is enormous, yet of these the examples that bear some sign of use, retouching, or secondary chipping are very numerous.

There are a few well-chipped arrowpoints and other small implements both from under the surface and upon it. Until the excavations of last fall, no chipped point had been found there beneath the surface, but a sufficient number of such chipped forms were found to show that the inhabitants could and did make them when desired—it was not a lack of knowledge or skill, but simply a lack of the necessity for labor that accounts for the rude character of the whole industry.

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[1] The identification was kindly made by Professor C. Palache of Harvard University.

When a chip or rough mass would serve the purpose of an implement, it was undoubtedly used forthwith. In the case of projectile points the results of such use would hardly be apparent on the flint; in scrapers of the *grattoir* type (those with the scraping edge at right angles to the axis of the lower arm) in most cases some fine chipping would be apparent, though in other instances the form of the piece of flint alone would include it in the scraper class. The *grattoir* is the type represented by the great majority of American aboriginal scrapers.

In the case of the *racloir* type (where the scraping edge is parallel with the axis of the lower arm) marks of use are practically necessary to distinguish them from flakes used or to be used as knives.

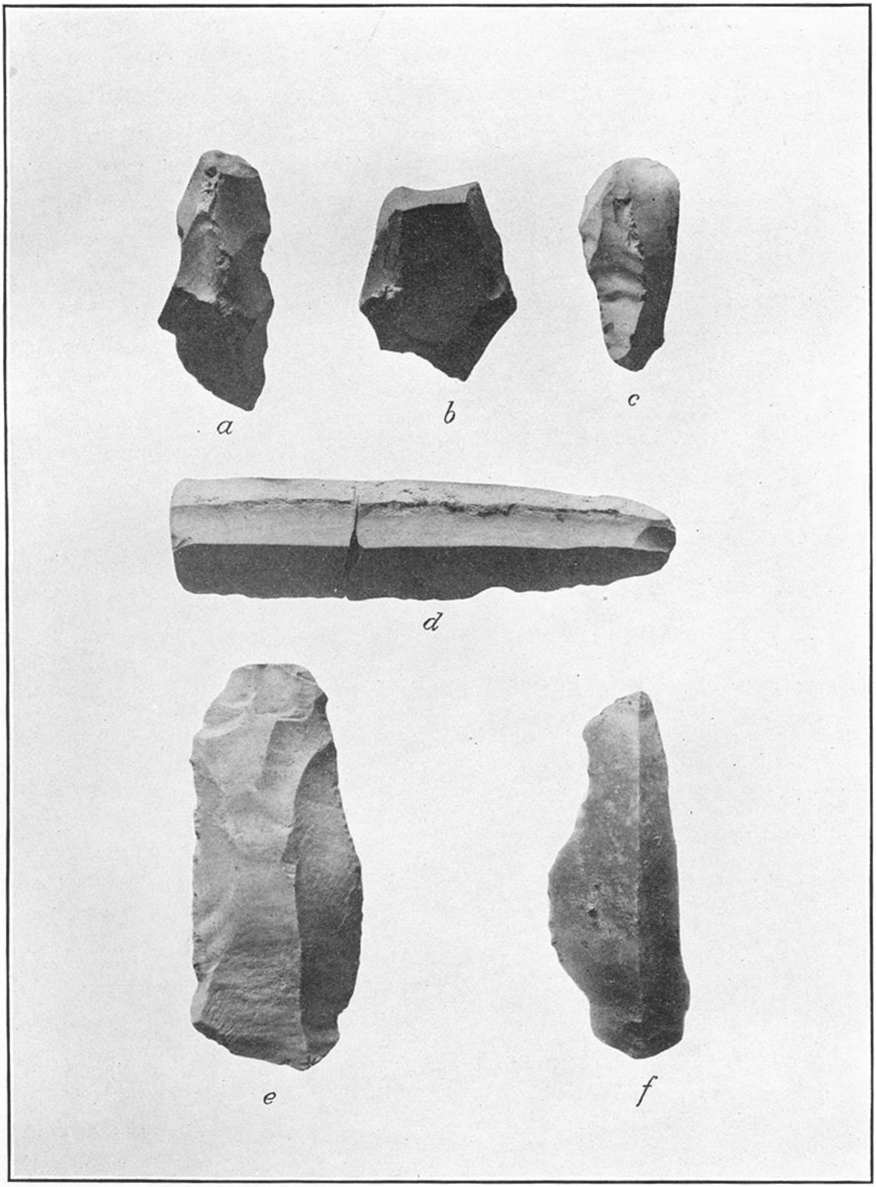
A number of scrapers of both types have a circular scraping edge (small spokeshaves or *encoches*); often this is also only a result of use.

A number of fine, thin flakes have been classified as knives, where their use as such was fairly to be assumed.

Perforators were proportionally very numerous. In some cases the point is finely chipped on one side for a few millimeters. The inhabitants took as much care in the manufacture of their perforators as they went without in fashioning their arrowpoints.

Besides perforators of the ordinary type, differing little from the corresponding American forms, there is a long series of "gravers" or "burins" with the stubby point characteristic of the Magdalenian burin. Not even in the latter case is secondary chipping at the point necessary to the recognition of the implement. It is needless to say that there is nothing paleolithic about the burins from Tarrin.

So far as the writer is aware, there are no paleolithic sites in the department, or even in the neighborhood. The ingenuity of the flint-knapper of neolithic times at Tarrin was largely transferred to the manufacture of fine, long blades of the finer varieties of flint.



THREE GRATTOIRS, ONE RACLOIR, AND TWO KNIVES FROM TARRIN

a, *b*, *c*, *d*, *e*, from the surface ; *f*, from beneath the surface. *d* is 68 mm. in length.

Of these blades (*lames*) hundreds of fragments exist. It is impossible to suggest uses for them; whether, when hafted, they may be useful as knives, hooks, currying tools, or harpoons, is a more or less futile inquiry. With two, three, or four longitudinal planes, the fragments, especially when looked through toward the filtering light, are exceedingly beautiful—to us, though hardly to their neolithic manufacturers, they justify their own existence.

How small some of the fragments are may be seen; in a box containing one hundred and fifty of them they range upward from a length of 9 millimeters and a width of 6 millimeters. There is one fragment in two planes measuring 23 millimeters by 17 millimeters with a thickness of the median ridge at the break of only 1.5 millimeter.

As might be expected, nuclei are abundant and good. Many of them would make excellent sling-stones, but this is a use which one hesitates to assume. Also a number of them may be *grattoirs Tarté*.

The flint from which the implements were made is of many appearances. The dark or black variety is probably from the slopes of the mountain above, where it occurs amalgamated with the limestone in considerable quantities. A number of interesting nuclei have as a base the native limestone.

The white, brown, pink, and yellow flints are mostly imported, and some of them may have come from the Department of Vaucluse, by way of that of the Basses Alpes.

Fifty fragments at random give the following:

Dark flint	11
Dark gray	15
Light gray	5
Pink	4
Yellowish white	15
	50

Some localities, for example, on a terrace a few decameters to the east, provided a larger proportion of native, dark, unpatinated flint than others where the greatest variety of color and patination could be observed. The latter may be white, pink, or blue, with all grades of stippling and dappling.

The present discussion as to patination leads one to keep silence failing further and very far-reaching experiments. It is, however, highly probable that both under and upon the surface patination goes on; that it is an uncertain index of age, and that by reason of wash and rains the most capricious results on similar materials and in spots of very limited area may be expected.[1]

Upon and under the surface were a great many small fragments of polished neolithic celts; but not one whole polished neolithic implement was found beneath the surface; the breaking was so constant as to suggest a purpose.

Animal Bones.—Through the kindness of Dr Glover M. Allen, of the Museum of Comparative Zoology, Harvard University, the following animal bones have been identified:

Helix hortensis.
Helix (Tachea) nemoralis (?).
Sus scrofa, wild or domestic.
Bos taurus, or its wild ancestor the *Aurochs.*
Capra hircus.
Ovis aries (?).
Cervus elaphus.
Bison bonasus.

Ox-bones are particularly numerous, possibly on account of their large size. Game is surprisingly absent.

The finding of the European bison is surprising; one tooth apparently of this animal was found near "Fond de Cabane 1" at a depth of 1 meter 50 centimeters.

Minute snail-shells from the trenches were identified by Mr Martin on the ground as those of *Succinea pfeifferi.*

With the exception of the bison no faunal species not now native to the region were found, though some differences of relative frequency could be observed.

The following classification, especially in the case of the flints, is quite arbitrary. Few of the points have any secondary chipping,

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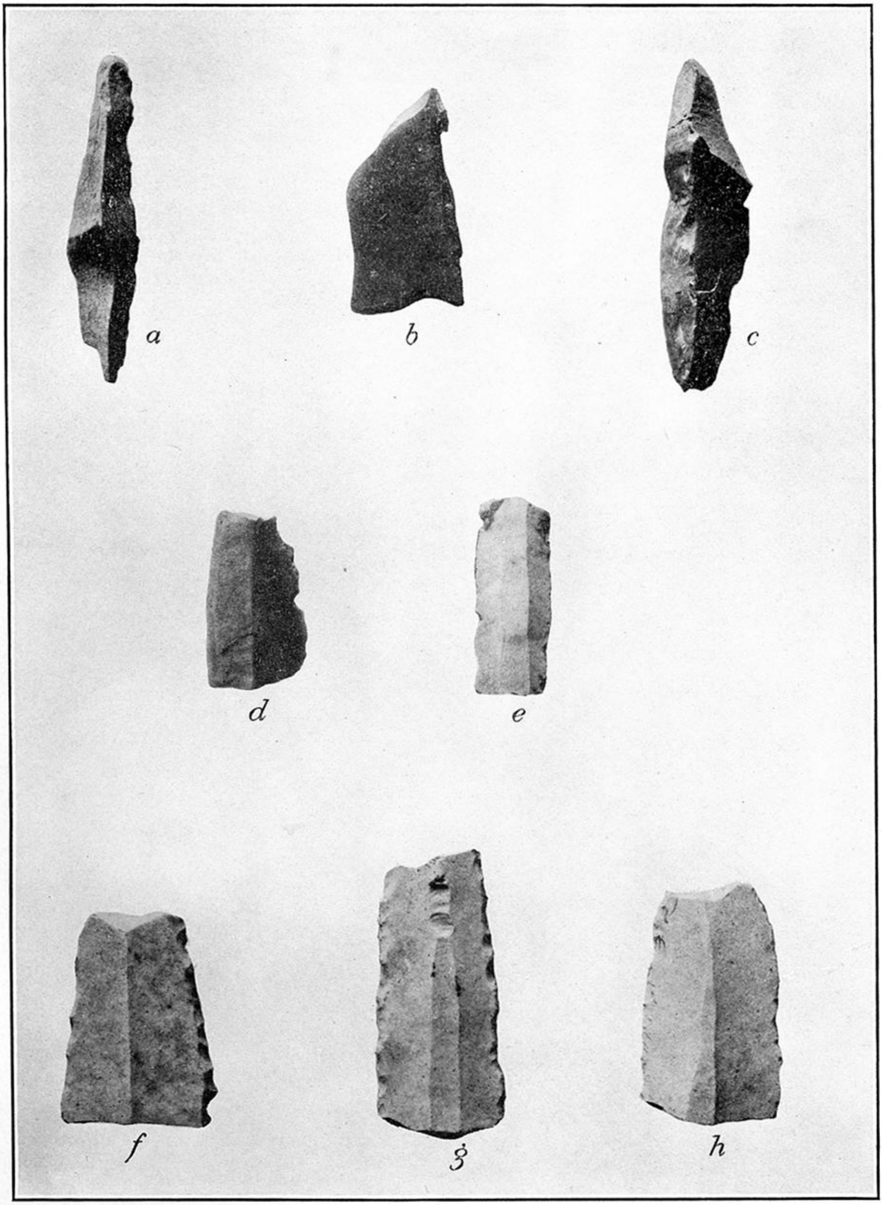
[1] Dr David Martin, of the Musée Départemental at Gap, has observed limestone differently patinated according to the stratum in which it has been held; cf. also Dr Allen Sturge's articles in *Proc. Prehist. Soc. East Anglia,* 1908–1909, and 1909–1910, I, 1, pp. 43 ff.



THREE PERFORATORS AND FIVE FRAGMENTS OF BLADES

a, b, c, from the surface; *d, e, f, g, h,* from beneath the surface. *a* is 32 mm. in length.

yet it seemed impossible to classify them as mere chips, and if they are not such the only alternative is to put them under the heading of their supposititious use.

Apropos of the use of unretouched points I was informed that a brother of the Dr de Vésignié who had excavated at Tarrin discovered at the Grotte de Sigottier, Hautes Alpes, a human femur containing a broken point without retouching. On my writing to Captain de Vésignié for information and permission to use it, I received a most courteous letter giving very full details. The fragment of the point he describes as follows:

> Il est certain que la pointe en silex d'où provient l'éclat resté dans l'os n'était pas une pointe bien travaillée, comme la plupart de celles qui constituaient le mobilier de la grotte. D'autre part la forme ovalaire de la section de cassure ne semble pas indiquer une pointe absolument fruste et sans retouches.

An instance among the flints found at Tarrin presents a flake in the form of a point, with a few millimeters of secondary chipping. With the intermediate steps thus represented, albeit sparsely, it is not unreasonable to classify a certain number of unretouched flints as points, for lack of anything better to do with them.

A few meters to the southeast of the larger excavation, a trial excavation was made, known in distinction to the former (Excavation 1) as Excavation 2. Not very much was found here.

That a general rule of its being advisable to dig, other things equal, where the surface finds are numerous may be proven, the specimens found on the ground on the plateau excavated have been listed separately. The rest of the classification explains itself.

There was also found in trench 2, at a depth of 2.30 meters, a fragment of what appears to have been a limestone bracelet. The nearest analogy to this that I could find at St. Germain is of date later than the neolithic; if the fragment is of like date, it would indicate much disturbing of the soil.

Pottery Fragments from the Tarrin Excavations

	RIMS	HANDLES	RIDGES	BASES	OTHER	TOTAL	THIN WARE
INTERIOR							
Excavation 1	83	30	30	2	803	948	64
Excavation 2	0	0	1	1	10	12	0
Total interior	83	30	31	3	813	960	64
SURFACE							
Excavation 1	2	1	0	0	48	51	
Surface in general	4	1	0	2	29	36	2
Total surface	6	2	0	2	77	87	
Grand total	89	32	31	5	890	1,047	

Flints Found Under the Surface

	TRENCH 1	TRENCH 2	FOND DE CABANE 1	TOTAL
POINTS, sharp	4	3	2	9
Dull	2	3	2	7
Leaf-shaped	0	3	3	6
Sides more or less straight	0	0	0	0
Tanged	1	1	0	2
Unclassified	0	1	0	1
Total	7	11	7	25
"GRATTOIRS," high, or "CARÉNÉS"	0	2	0	2
Long, blunt	0	1	0	1
Tanged	0	0	1	1
Unclassified	3	5	0	8
Total	3	8	1	12
"RACLOIRS," simple	1	1	0	2
Double	0	2	0	2
Total	1	3	0	4
Round flakes (suitable for scrapers)	3	4	5	12
Perforators	1	1	0	2
Fragments of blades	10	18	12	40
Masses and chips	98	190	92	380
Nuclei	4	4	4	12
Fragments of celt	4	7	5	16
Knives (flakes)	0	4	5	9
Saw (?)	0	2	0	2

Flints Found under the Surface—Continued

	TRENCH 1	TRENCH 2	FOND DE CABANE 1	TOTAL
ADDITIONAL				
Paint-stones	1	2	2	5
Hammer-stones	2	1	0	3
Quartz	1	0	0	1
Chalk	0	0	1	1

Flints Found on the Surface

	EXCAVATION 1	GENERAL	TOTAL
POINTS, with one edge bulging	0	27	27
Oval	0	3	3
Leaf-shaped	1	4	5
Sides more or less straight	0	17	17
Tanged	2	13	15
Round in section	0	12	12
Unclassified	12	22	34
Total	15	98	113
GRATTOIRS, high	0	7	7
Carénés	0	5	5
Long and blunt	0	9	9
Flat	0	34	34
Encoche	0	6	6
Triangular	1	4	5
Tanged	0	8	8
Unclassified	1	16	17
Total	2	89	91
RACLOIRS, simple	3	12	15
Double	2	2	4
Oblong with a scraping edge all round	0	3	3
Encoche	0	1	1
Tangée	0	4	4
Unclassified	0	5	5
Total	5	27	32
GRATTOIRS-RACLOIRS	0	2	2
PERFORATORS, ordinary	2	46	48
Perforators, ordinary	0	6	6
Winged (?)	0	1	1
Flattened back	0	1	1
Gravers	2	18	20
Unclassified	2	8	10
Total perforators	6	80	86

Flints Found on the Surface—Continued

	EXCAVATION I	GENERAL	TOTAL
Blades, fragments	16	180	196
Blades with encoche	0	10	10
Total	16	190	206
Masses and chips	193	1,176	1,369
Ditto, small	0	160	160
Total chips	193	1,336	1,529
Nuclei	5	92	97
Sickle-shapes	0	1	3
Knives	0	3	1
Fragments of diorite celts	13	41	54

As a whole, then, judging from the work of Mr Plat and Dr de Vésignié previous to our own, and from what we found, Tarrin seems to have been a site for a more or less constant occupancy in neolithic times. The inhabitants were quiet rather than hunters, and possibly may be designated as a grazing people.

There must have been many inhabitants, for the slopes of the mountains up to an altitude of 1,000 meters carry the flints and bone fragments of these prehistoric peoples.

Peabody Museum, Harvard University
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